

UNIT 4.1

LINEAR RELATIONS

4.1(6.1) - First Differences

This table shows the money in a bank account when it was opened, and at the end of each following week.

Number of weeks	Account balance (\$)
0	200
1	175
2	150
3	125
4	100

a) Determine the first differences.

Number of weeks	Account balance (\$)	First differences
0	200	
1	175	$175 - 200 = -25$
2	150	$150 - 175 = -25$
3	125	$125 - 150 = -25$
4	100	$100 - 125 = -25$

if the 1st differences are constant linear

b) What do the first differences represent in this situation?

⇒ The change in the account balance each week. Since the first differences are negative, money is being withdrawn

c) Is this a linear or non-linear relation? Explain why.

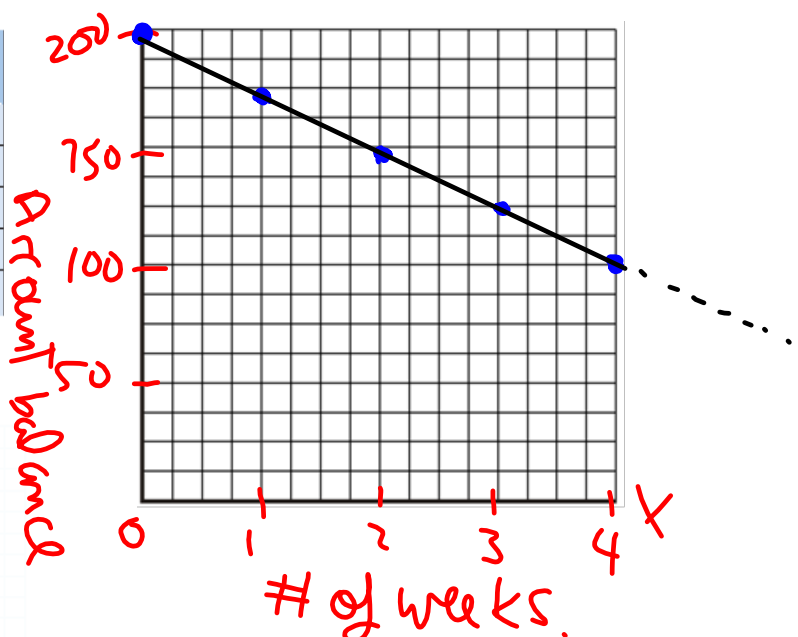
⇒ The relationship is linear because the first differences are constant.

d) Graph this relationship. Describe how the patterns in the table are shown in the graph.

x Number of weeks	y Account balance (\$)
0	200
1	175
2	150
3	125
4	100

$(0, 200)$

⇒



e) What does the point (0, 200) represent in this situation?

At 0 weeks you have \$200
in your bank account.

f) How much money is in the account after 6 weeks?

There will be \$50 left
in the account after
6 weeks

Assigned Work

p. 194 #1

p. 196 #5, 6